

2SK2569

Silicon N Channel MOS FET

REJ03G1018-0300

Rev.3.00

Dec 27, 2006

Application

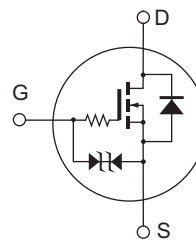
High speed power switching

Features

- Low on-resistance.
- $R_{DS(on)} = 2.6 \Omega$ max. (at $V_{GS} = 4 \text{ V}$, $I_D = 100 \text{ mA}$)
- 2.5 V gate drive device.
- Small package (MPAK).

Outline

RENESAS Package code: PLSP0003ZB-A
(Package name: MPAK)



1. Source
2. Gate
3. Drain

Note: Marking is "ZN-"

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	50	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	0.2	A
Drain peak current	$I_{D(pulse)}^{*1}$	0.4	A
Channel dissipation	P_{ch}^{*2}	150	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Note: 1. PW ≤ 10 μs, duty cycle ≤ 1 %

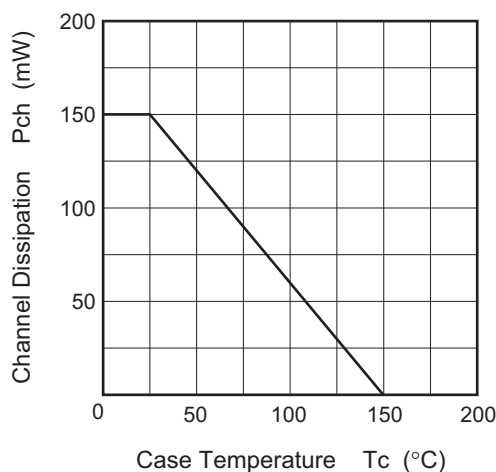
Electrical Characteristics

(Ta = 25°C)

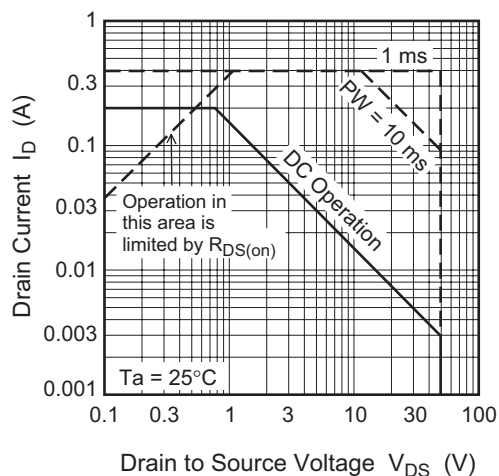
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	50	—	—	V	$I_D = 100 \mu A, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu A, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1.0	μA	$V_{DS} = 40 V, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 2.0	μA	$V_{GS} = \pm 16 V, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.5	—	1.5	V	$I_D = 10 \mu A, V_{DS} = 5 V$
Static drain to source on state resistance	$R_{DS(on)1}$	—	2.0	2.6	Ω	$I_D = 100 mA, V_{GS} = 4 V^{*2}$
Static drain to source on state resistance	$R_{DS(on)2}$	—	3.1	5.0	Ω	$I_D = 40 mA, V_{GS} = 2.5 V^{*2}$
Forward transfer admittance	$ y_{fs} $	0.13	0.23	—	S	$I_D = 100 mA, V_{DS} = 10 V$
Input capacitance	C_{iss}	—	14.0	—	pF	$V_{DS} = 10 V, V_{GS} = 0,$ $f = 1 MHz$
Output capacitance	C_{oss}	—	17.2	—	pF	
Reverse transfer capacitance	C_{rss}	—	1.73	—	pF	
Turn-on delay time	$t_{d(on)}$	—	40	—	ns	$V_{GS} = 10 V, I_D = 100 mA,$ $R_L = 300 \Omega$
Rise time	t_r	—	86	—	ns	
Turn-off delay time	$t_{d(off)}$	—	1120	—	ns	
Fall time	t_f	—	430	—	ns	

Note: 2. Pulse test

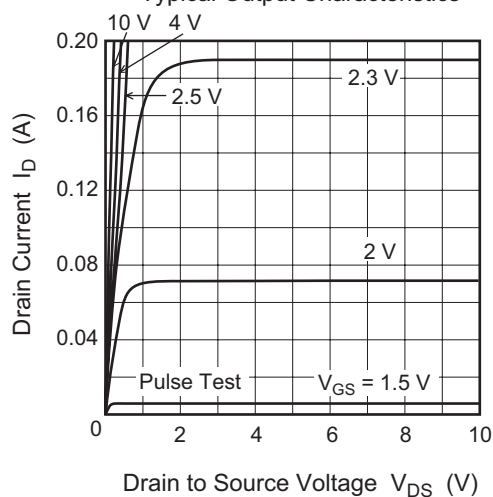
Power vs. Temperature Derating



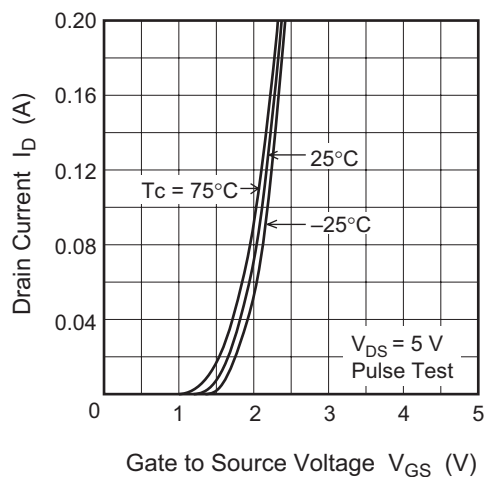
Maximum Safe Operation Area



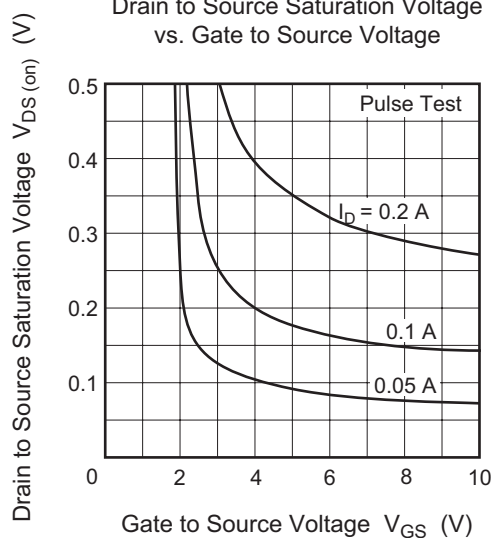
Typical Output Characteristics



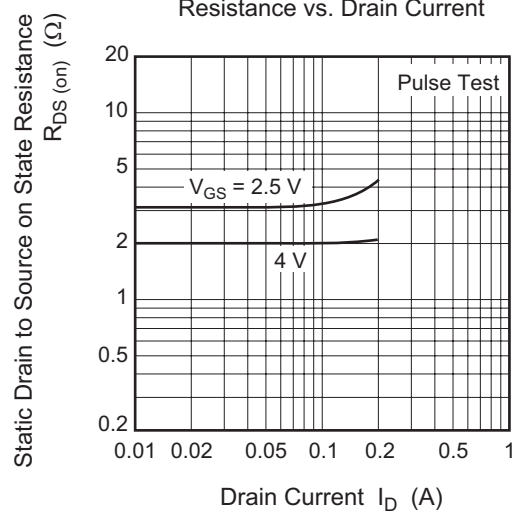
Typical Transfer Characteristics

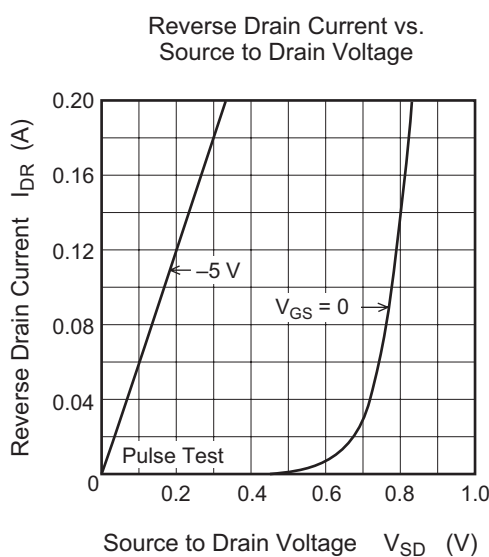
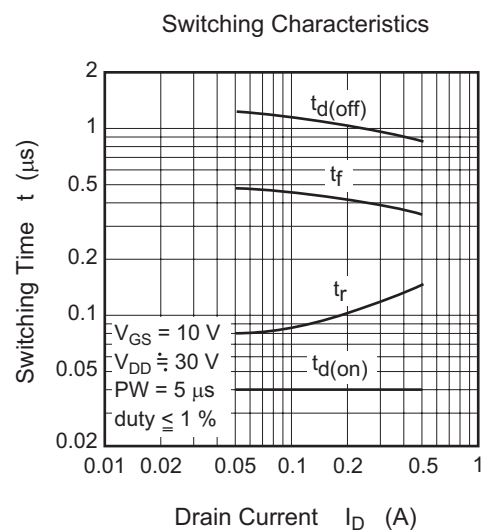
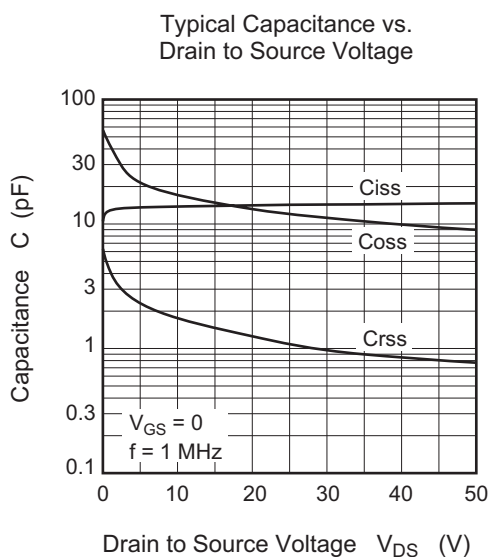
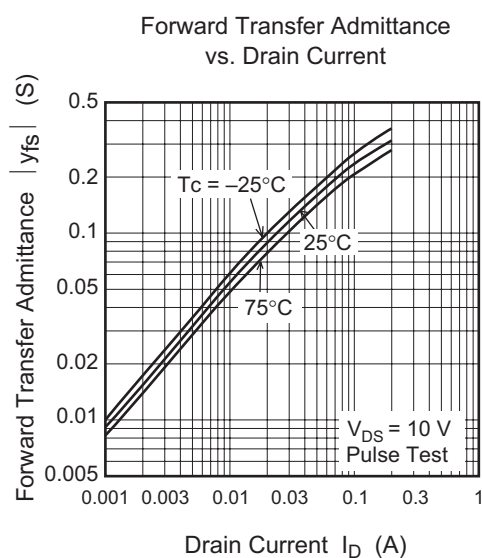
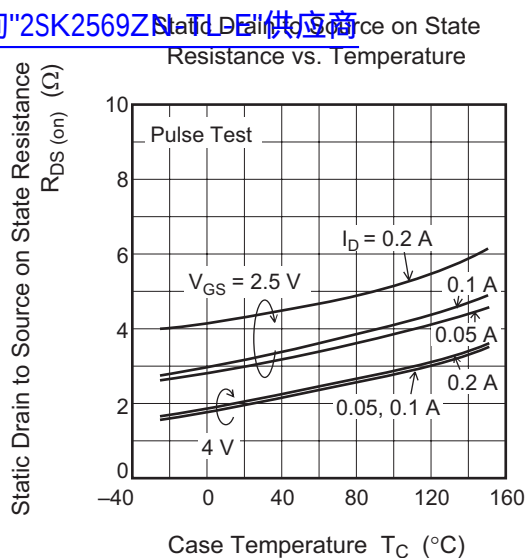


Drain to Source Saturation Voltage vs. Gate to Source Voltage

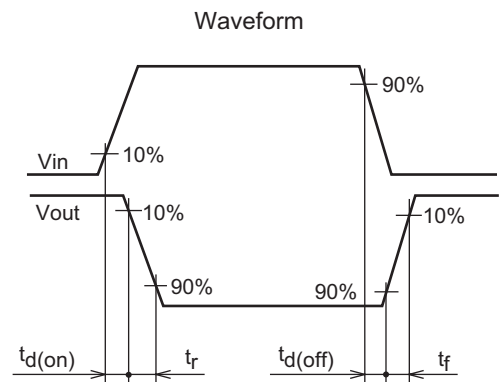
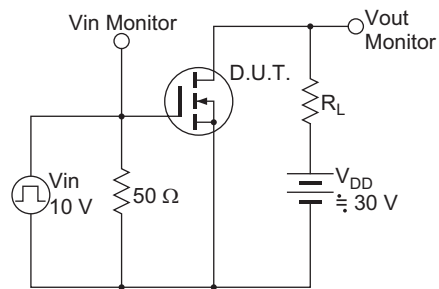


Static Drain to Source on State Resistance vs. Drain Current

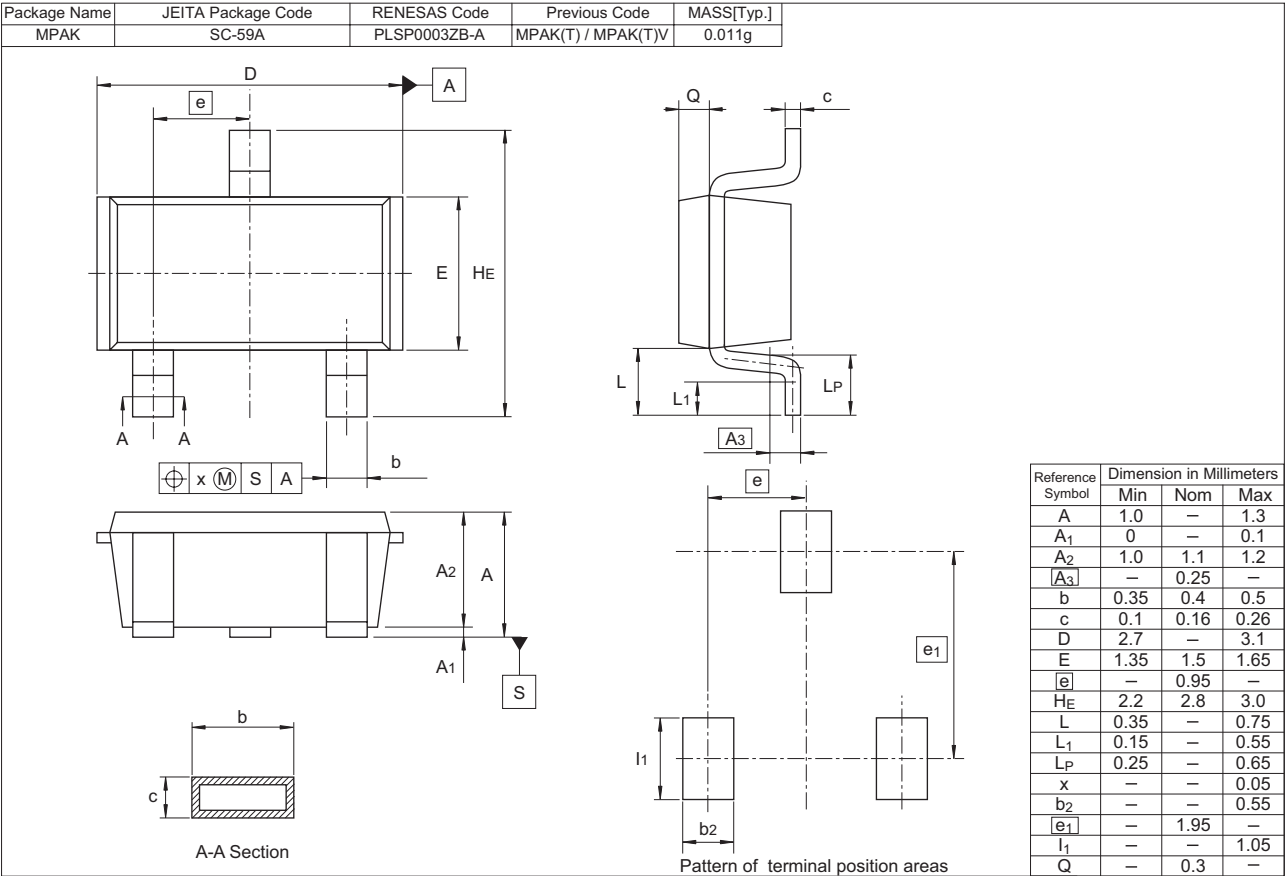


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Part Name	Quantity	Shipping Container
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